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3 Identification of malicious transactions in database systems
Yi Hu; Panda, B.;

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Norvag, K.;

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5 A performance evaluation of log-only temporal object database systems
Norvag, K.;
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6 Performance considerations for an operating system transaction manager
Kumar, A.; Stonebraker, M.;
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7 Online Web mining transactions association rules using frame meta model
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10 Transactions in the client-server EOS object store
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11 Data base recovery in shared disks and client-server architectures*Mohan, C.; Narang, I.;*

Distributed Computing Systems, 1992., Proceedings of the 12th International Conference on , 9-12 June 1992

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Systems, Man and Cybernetics, Part A, IEEE Transactions on , Volume: 31 , I 4 , July 2001

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[\[Abstract\]](#) [\[PDF Full-Text \(456 KB\)\]](#) [IEEE JNL](#)**14 Recovery analysis of data sharing systems under deferred dirty page propagation policies***Dan, A.; Yu, P.S.; Jhingran, A.;*

Parallel and Distributed Systems, IEEE Transactions on , Volume: 8 , Issue: 7 1997

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[\[Abstract\]](#) [\[PDF Full-Text \(272 KB\)\]](#) [IEEE JNL](#)**15 Accommodating logical logging under fuzzy checkpointing in main memory databases***Seungkyoon Woo; Myoung Ho Kim; Yoon Joon Lee;*

Database Engineering and Applications Symposium, 1997. IDEAS '97. Proceedings., International , 25-27 Aug. 1997

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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Query evaluation techniques for large databases](#)

Goetz Graefe

June 1993 **ACM Computing Surveys (CSUR)**, Volume 25 Issue 2Full text available: [pdf\(9.37 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Database management systems will continue to manage large data volumes. Thus, efficient algorithms for accessing and manipulating large sets and sequences will be required to provide acceptable performance. The advent of object-oriented and extensible database systems will not solve this problem. On the contrary, modern data models exacerbate the problem: In order to manipulate large sets of complex objects as efficiently as today's database systems manipulate simple records, query-processi ...

Keywords: complex query evaluation plans, dynamic query evaluation plans, extensible database systems, iterators, object-oriented database systems, operator model of parallelization, parallel algorithms, relational database systems, set-matching algorithms, sort-hash duality

2 [Empirical performance evaluation of concurrency and coherency control protocols for database sharing systems](#)

Erhard Rahm

June 1993 **ACM Transactions on Database Systems (TODS)**, Volume 18 Issue 2Full text available: [pdf\(3.37 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Database Sharing (DB-sharing) refers to a general approach for building a distributed high performance transaction system. The nodes of a DB-sharing system are locally coupled via a high-speed interconnect and share a common database at the disk level. This is also known as a "shared disk" approach. We compare database sharing with the database partitioning (shared nothing) approach and discuss the functional DBMS components that require new and coordinated solutions for DB-shar ...


Keywords: coherency control, concurrency control, database partitioning, database sharing, performance analysis, shared disk, shared nothing, trace-driven simulation

09/804, 672

h c g e c f c

3 Flexible update propagation for weakly consistent replication


Karin Petersen, Mike J. Spreitzer, Douglas B. Terry, Marvin M. Theimer, Alan J. Demers
October 1997 **ACM SIGOPS Operating Systems Review , Proceedings of the sixteenth ACM symposium on Operating systems principles**, Volume 31 Issue 5

Full text available:  pdf(2.16 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

4 AGM: a dataflow database machine

Lubomir Bic, Robert L. Hartmann
March 1989 **ACM Transactions on Database Systems (TODS)**, Volume 14 Issue 1

Full text available:  pdf(2.69 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

In recent years, a number of database machines consisting of large numbers of parallel processing elements have been proposed. Unfortunately, there are two main limitations in database processing that prevent a high degree of parallelism; these are the available I/O bandwidth of the underlying storage devices and the concurrency control mechanisms necessary to guarantee data integrity. The main problem with conventional approaches is the lack of a computational model capable of utilizing th ...

5 Garbage collection for a client-server persistent object store

Laurent Amsaleg, Michael J. Franklin, Olivier Gruber
August 1999 **ACM Transactions on Computer Systems (TOCS)**, Volume 17 Issue 3

Full text available:  pdf(267.18 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We describe an efficient server-based algorithm for garbage collecting persistent object stores in a client-server environmnet. The algorithm is incremental and runs concurrently with client transactions. Unlike previous algorithms, it does not hold any transactional locks on data and does non require callbacks to clients. It is fault-tolerant, but performs very little logging. The algorithm has been designed to be integrated into existing systems, and therefore it works with standard i ...

Keywords: client-server system, logging, persistent object-store, recovery

6 Open commit protocols tolerating commission failures

Kurt Rothermel, Stefan Pappe
June 1993 **ACM Transactions on Database Systems (TODS)**, Volume 18 Issue 2

Full text available:  pdf(3.21 MB)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

To ensure atomicity of transactions in distributed systems so-called 2-phase commit (2PC) protocols have been proposed. The basic assumption of these protocols is that the processing nodes involved in transactions are "sane," i.e., they only fail with omission failures, and nodes eventually recover from failures. Unfortunately, this assumption is not realistic for so-called Open Distributed Systems (ODSs), in which nodes may have totally different reliability characteristics. In ...

Keywords: commit protocols, open systems

7 File servers for network-based distributed systems

Liba Svobodova
December 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 4

Full text available:  pdf(4.23 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

8 Extended ephemeral logging: log storage management for applications with long lived transactions

John S. Keen, William J. Dally

March 1997 **ACM Transactions on Database Systems (TODS)**, Volume 22 Issue 1


Full text available:  [pdf\(566.34 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#), [review](#)

Keywords: OLTP, disk management, logging, long transactions

9 Achieving robustness in distributed database systems

Derek L. Eager, Kenneth C. Sevcik

September 1983 **ACM Transactions on Database Systems (TODS)**, Volume 8 Issue 3

Full text available:  [pdf\(2.33 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The problem of concurrency control in distributed database systems in which site and communication link failures may occur is considered. The possible range of failures is not restricted; in particular, failures may induce an arbitrary network partitioning. It is desirable to attain a high "level of robustness" in such a system; that is, these failures should have only a small impact on system operation. A level of robustness termed maximal partial operability ...

Keywords: concurrency control, network partitioning, robustness, searializability

10 A declarative approach to optimize bulk loading into databases

Sihem Amer-Yahia, Sophie Cluet

June 2004 **ACM Transactions on Database Systems (TODS)**, Volume 29 Issue 2

Full text available:  [pdf\(1.00 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Applications, such as warehouse maintenance, need to load large data volumes regularly. The efficiency of loading depends on the resources that are available at the source and at the target systems. Our work aims to understand the performance criteria that are involved in bulk loading data into a database and to devise tailored optimization strategies. Unlike commercial systems and previous research on the same topic, our approach follows the fundamental database principle of physical-logical ind ...

Keywords: Declarative bulk loading, algebra, recovery, side-effects

11 Maintaining availability in partitioned replicated databases

A. El Abbadi, S. Toueg

June 1989 **ACM Transactions on Database Systems (TODS)**, Volume 14 Issue 2

Full text available:  [pdf\(2.32 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

In a replicated database, a data item may have copies residing on several sites. A replica control protocol is necessary to ensure that data items with several copies behave as if they consist of a single copy, as far as users can tell. We describe a new replica control protocol that allows the accessing of data in spite of site failures and network partitioning. This protocol provides the database designer with a large degree of flexibility in deciding the degree of data availability, as w ...


Distributed transactions for reliable systems

Alfred Z. Spector, Dean Daniels, Daniel Duchamp, Jeffrey L. Eppinger, Randy Pausch
December 1985 **ACM SIGOPS Operating Systems Review , Proceedings of the tenth ACM symposium on Operating systems principles**, Volume 19 Issue 5

Full text available:  [pdf\(1.44 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

13 Distributed file systems: concepts and examples


Eliezer Levy, Abraham Silberschatz
December 1990 **ACM Computing Surveys (CSUR)**, Volume 22 Issue 4

Full text available:  [pdf\(5.33 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The purpose of a distributed file system (DFS) is to allow users of physically distributed computers to share data and storage resources by using a common file system. A typical configuration for a DFS is a collection of workstations and mainframes connected by a local area network (LAN). A DFS is implemented as part of the operating system of each of the connected computers. This paper establishes a viewpoint that emphasizes the dispersed structure and decentralization of both data and con ...

14 Crash recovery in client-server EXODUS


Michael J. Franklin, Michael J. Zwillig, C. K. Tan, Michael J. Carey, David J. DeWitt
June 1992 **ACM SIGMOD Record , Proceedings of the 1992 ACM SIGMOD international conference on Management of data**, Volume 21 Issue 2

Full text available:  [pdf\(1.50 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, we address the correctness and performance issues that arise when implementing logging and crash recovery in a page-server environment. The issues result from two characteristics of page-server systems: 1) the fact that data is modified and cached in client database buffers that are not accessible by the server, and 2) the performance and cost trade-offs that are inherent in a client-server environment. We describe a recovery system that we have implemented for the client-ser ...

15 Extending a database system with procedures

Michael Stonebraker, Jeff Anton, Eric Hanson
September 1987 **ACM Transactions on Database Systems (TODS)**, Volume 12 Issue 3

Full text available:  [pdf\(2.15 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

This paper suggests that more powerful database systems (DBMS) can be built by supporting database procedures as full-fledged database objects. In particular, allowing fields of a database to be a collection of queries in the query language of the system is shown to allow the natural expression of complex data relationships. Moreover, many of the features present in object-oriented systems and semantic data models can be supported by this facility. In order to implement this cons ...


16 A Survey of Techniques for Synchronization and Recovery in Decentralized Computer Systems

Walter H. Kohler
June 1981 **ACM Computing Surveys (CSUR)**, Volume 13 Issue 2

Full text available:  [pdf\(3.33 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

17 Client-server computing in mobile environments

Jin Jing, Abdelsalam Sumi Helal, Ahmed Elmagarmid
June 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 2

Full text available:  pdf(233.31 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Recent advances in wireless data networking and portable information appliances have engendered a new paradigm of computing, called mobile computing, in which users carrying portable devices have access to data and information services regardless of their physical location or movement behavior. In the meantime, research addressing information access in mobile environments has proliferated. In this survey, we provide a concrete framework and categorization of the various way ...

Keywords: application adaptation, cache invalidation, caching, client/server, data dissemination, disconnected operation, mobile applications, mobile client/server, mobile computing, mobile data, mobility awareness, survey, system application

18 Synchronization and recovery in a client-server storage system

E. Panagos, A. Biliris
August 1997 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 6 Issue 3


Full text available:  pdf(205.25 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Client-server object-oriented database management systems differ significantly from traditional centralized systems in terms of their architecture and the applications they target. In this paper, we present the client-server architecture of the EOS storage manager and we describe the concurrency control and recovery mechanisms it employs. EOS offers a semi-optimistic locking scheme based on the multi-granularity two-version two-phase locking protocol. Under this scheme, multiple concurrent reads ...

Keywords: Checkpoint, Client-server architecture, Object management, Concurrency control, Locking, Logging, Recovery, Transaction management

19 The design of POSTGRES

Michael Stonebraker, Lawrence A. Rowe
June 1986 **ACM SIGMOD Record , Proceedings of the 1986 ACM SIGMOD international conference on Management of data**, Volume 15 Issue 2

Full text available:  pdf(1.91 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents the preliminary design of a new database management system, called POSTGRES, that is the successor to the INGRES relational database system. The main design goals of the new system are to provide better support for complex objects, provide user extensibility for data types, operators and access methods, provide facilities for active databases (i.e., alerters and triggers) and inferencing including forward- ...

20 Form management

D. Tschritzis
July 1982 **Communications of the ACM**, Volume 25 Issue 7

Full text available:  pdf(2.78 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper consists of three interrelated parts. In the first part forms are introduced as an abstraction and generalization of business paper forms. A set of facilities for the manipulation of forms and their contents is outlined. Forms can be created, stored, found, viewed in different media, mailed, and located by office workers. Data on forms can also be processed in a completely integrated way. The facilities are discussed both abstractly and in relation to a prototype ...

Keywords: database management, office modeling, office procedures

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